

December 2005

## CURRICULUM VITAE

**Name:** J. Silvio Gutkind

**Work Address:** Oral and Pharyngeal Cancer Branch  
National Institute of Dental and Craniofacial Research  
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**Education:**

1976-1980 Pharmacy Degree (M.Sc.), University of Buenos Aires, Argentina  
1976-1983 Biochemistry Degree (M.Sc.), University of Buenos Aires, Argentina.  
1985 Ph.D. in Pharmacy and Biochemistry, University of Buenos Aires,  
Argentina

**Brief Chronology of Employment:**

1998-present Chief, Oral and Pharyngeal Cancer Branch, National Institute of Dental Research, NIH, Bethesda, USA  
1997-present Chief, Cell Growth Regulation Section and Molecular Carcinogenesis Unit, Oral and Pharyngeal Cancer Branch, National Institute of Dental Research, NIH, Bethesda, USA  
1996-1997 Acting Chief, Oral and Pharyngeal Cancer Branch, National Institute of Dental Research, NIH, Bethesda, USA  
1993-1997 Chief, Molecular Signaling Unit, Laboratory of Cellular Development and Oncology, National Institute of Dental Research, NIH, Bethesda, USA.  
1992-1993 Head, Molecular Signaling Group, Laboratory of Cellular Development and Oncology, National Institute of Dental Research, NIH, Bethesda, USA.  
1989-1992 Visiting Associate, Laboratory of Cellular Development and Oncology, National Institute of Dental Research, NIH, Bethesda, USA.  
1988-1989 Fogarty Visiting Fellow, Laboratory of Cellular Development and Oncology, National Institute of Dental Research, NIH, Bethesda, USA.  
1987-1988 Fogarty Visiting Fellow, NIDR, Guest Researcher at the Laboratory of Cellular and Molecular Biology, National Cancer Institute, NIH, Bethesda, USA.

1986-1987	International Fogarty Fellow, Laboratory of Clinical Science, National Institute of Mental Health, NIH, Bethesda, USA.
1983-1986	Research Assistant, Department of Pharmacology, School of Pharmacy and Biochemistry, University of Buenos Aires, Argentina.
1981-1983	Part-time Instructor, Department of Pharmacology, School of Pharmacy and Biochemistry, University of Buenos Aires, Argentina.
1979-1980	Part-time Instructor, Department of Organic Chemistry, School of Pharmacy and Biochemistry, University of Buenos Aires, Argentina.

#### **Honors and other special scientific recognitions:**

2005	NIH Director's Award
2005	Elliot Osserman Award, Israel Cancer Research Foundation
2004	International Association of Dental Research (IADR) Distinguished Scientist Award, Oral Medicine and Pathology
2003	NIH Hispanic Heritage Month Celebration: Hispanic Contributions to Research in the United States, Lecture
2000	NIDCR Director's Exemplary Service Award
1999	EEO Special Achievement Award, NIDCR, NIH
1998	Appointment as member of the Senior Biomedical Research Services (SBRS)
1997	NIDR Director's Exemplary Service Award
1996	NIH Merit Award
1996	Santa Cruz Biotechnology Investigator Award, Recipient Supervisor
1989	Funds for Young Scientists, Travel Award, Organizing Committee of the 7th International Conference on Protein Phosphorylation, Kobe, Japan
1986	International Fogarty Fellowship, National Institutes of Health, USA
1983	Gold Medal Award and Diploma of Honor, first rank student of the School of Pharmacy and Biochemistry, University of Buenos Aires, Argentina.

#### **Grants:**

2003	NIAID Support of Intramural Biodefense Research, "Molecular Pathogenesis of Ebola Virulence Genes <i>in vivo</i> ." Estimated Total Direct Costs: \$ 489,400. 2003-2005
2004	Intramural AIDS Targeted Antiviral Program (IATAP), "Molecular basis of AIDS-associated Kaposi's sarcoma." Estimated Total Direct Costs: \$ 220,000. 2005-2006

#### **Professional Membership and Associations:**

American Association for the Advancement of Science  
 American Society of Microbiology  
 American Association of Molecular Biology  
 International Association for Dental Research  
 American Association for Dental Research  
 Founder Member, International Academy of Oral Oncology

**Patents:**

5,384,243, issued January 24, 1995. J. Silvio Gutkind and Keith C. Robbins: Method for screening an agent for its ability to prevent cell transformation.

**Editorial Responsibilities:**

- 1998-2003 Member, Editorial Board, Journal of Biological Chemistry  
1998-2000 Editor, Book on Signaling Networks and Cell Cycle Control, Humana Press  
2000-2003 Co-Editor, Book on Head and Neck Cancer, Emerging Perspectives, Wiley & Co  
2000-present Member, Editorial Board, Oral Oncology  
2001-present Member, Editorial Board, Biochemistry  
2001-present Member, Editorial Board, Revista de Oncologia, Mexico-Spain  
2002-2003 Co-Editor, Book on Signal Transduction and Human Disease, Wiley & Co  
2002-present Member, Faculty 1000, Reviewing Editor  
2003-present Member, Editorial Board, Drug Discovery Today: Disease Mechanisms  
2005-present Member, Editorial Board, Molecular Biology of the Cell

**Symposia Organized:**

- 1995 Workshop on Signaling through G proteins, NIH  
1996 Workshop on Signal Transduction from the Membrane to the Nucleus, NIH  
1996 Third Annual Signal Transduction Therapy Conference, San Diego, California  
1996 Symposium on Regulation of Protein Kinases Involved in Cell Division, Congress of the Pan American Association of Biochemistry and Molecular Biology, Pucon, Chile  
1998 Workshop on G proteins, 10th International Conference on Second Messengers & Phosphoproteins, Jerusalem, Israel  
1999 Workshop on “Head and Neck Cancer Priority Setting”, organizing committee, NIH  
1999 Keystone Winter Symposia, “Oncogene Networks” and Session on “Cell Surface Receptors”  
2002 Workshop on Exchange factors, Juan March Foundation, Madrid, Spain  
2002 Symposium, Frontiers in Molecular Mechanisms in Cancer, Strategies and Application, Santander, Spain  
2002 NCI, NIDCD, NIDCR, Trans-NIH Squamous Carcinogenesis Retreat  
2002 International Oral Cancer Tissue Array Initiative, Organizing Meeting, NIDCR  
2004 Tva-Animal Models Meeting, Bethesda, MD  
2005 Advisory Organizing Committee, 10<sup>th</sup> International Congress on Oral Cancer (ICOOC), Crete, Greece

## **Invited Lectures and Presentations (since 2000)**

- 2005              University of Buenos Aires, School of Exact Sciences, Buenos Aires, Argentina  
MD Anderson Cancer Center, Austin, TX  
Institute of Materials Science, University of Connecticut, Storrs, CT  
Keynote lecture, First Meeting of the Latin-American Chapter of the IADR, Mar del Plata, Argentina  
Van Andel Research Institute, Grand Rapids, MI  
Symposium on MAP kinases and Cancer, CNIO, Madrid, Spain  
Keynote oration, International Congress on Oral Cancer, Crete, Greece  
Symposium on Clinical applications in Molecular Biology, International Congress on Oral Cancer, Crete, Greece  
Keynote lecture, Oral and Medicine Pathology, IADR and AADR meeting, Baltimore, MD  
University of Michigan, Ann Arbor, MI
- 2004-              Keynote speaker, CSBMCB 47th Annual Meeting Cellular Signaling: From the Membrane to the Nucleus, Quebec, Canada  
Duke University, Signal Transduction Lecture Series, Durham, NC  
Keynote speaker, Korean Society of Medical Biochemistry and Molecular Biology, Seoul, Korea  
Catholic University of Korea, in Seoul, Korea  
Symposium on Signalling Pathways in Cellular Differentiation, Ulm, Germany  
Joint Scientific Meeting (JSM) held by the local Scientific Societies in Mar del Plata, Argentina  
FASEB Summer Research Conference on Regulation and Biological Function of Small GTPases, Snowmass, CO  
Lung and Aerodigestive Chemoprevention Retreat, NCI, NIH  
ASBMB meeting, Symposium on Signal Transduction, Boston, MA  
Keynote Speaker, 6th International Conference on Head and Neck Cancer, Washington, DC  
NCI-Sponsored Think Tank on Head and Neck Cancer Etiology and Biology: Research Directions and Therapeutic Opportunities, Washington, DC  
MD Anderson Cancer Center, Houston, TX
- 2003-              Ontario Cancer Center, Canada  
Symposium on Signaling Complexes, Jena, Germany  
Symposium on G protein-Coupled Receptors: New Insights into the Signaling and Regulation. Paris, France  
NIH Hispanic Heritage Month Celebration: Hispanic Contributions to Research in the United States. Symposium on Novel Mechanisms of Cell Regulation  
NCI, AIDS Malignancies Clinical Trial Consortium  
MD Anderson Cancer Center, Houston, TX  
AAAS Annual Meeting and Science Innovation, Denver, CO  
AACR, 32nd Annual Meeting and Exhibition of the AACR, 27th Annual Meeting of the CADR, San Antonio, TX  
Gordon Research Conference, Mechanisms of Cell Signaling G Proteins, Ventura, CA

- University of Salamanca, Spain  
Symposium on GTPases and Cancer, CNIO, Madrid, Spain  
Symposium on Stress Signaling in Cancer, Quebec City, Canada  
2002-  
Karolinska Institute, Stockholm, Sweden  
March Foundation, Madrid, Spain  
Mayo Clinic, Rochester, MN  
MD Anderson, Houston, TX  
University of Pennsylvania, Philadelphia, PA  
Session Chair and Speaker, Gordon Conference on Protein Phosphorylation and Signal Transduction, New Hampshire,  
EMBO Meeting on G Proteins, Alsace, France  
International Doctorate Program, University of Naples, Naples, Italy  
University of Pittsburgh School of Medicine, Pittsburgh, PA  
Washington University, in St. Louis, MO  
IADR/AACR, San Diego, CA  
Jackson State University, Spring Symposium Workshop, Jackson, MS  
Third International Conference on Signal transduction, Dubrovnik, Croatia  
University of Heidelberg, Heidelberg, Germany  
2001-  
Symposium on Novel Molecular Targets for Cancer Therapy, Buenos Aires, Argentina  
Keynote speaker, Chilean Society of Biochemistry and Molecular Biology, Annual Meeting  
Virginia Commonwealth University, Massey Cancer Center, Richmond, VA,  
FASEB Summer Research Conference, Tucson, Arizona  
G Protein Signaling Workshop, New York, NY  
International University Menendez Pelayo, Santander, Spain  
Gordon Research Conference, CRC Mechanisms of Cell Signaling, Oxford, UK,  
Van Andel Research Institute, Grand Rapids, MI  
Symposium on Oral Cancer, World Congress on Preventive Dentistry, Beijing, China  
Chiron Co, Emeryville, CA  
Thammasat University, Bangkok, Thailand  
University of Virginia, Charlottesville, VA  
Endothelome Conference, Kumamoto, Japan  
Kumamoto University, Kumamoto, Japan  
Georgetown University, Washington, DC  
Picower Institute, New York, NY  
2000-  
G protein Coupled Receptor Symposium, Boston, MA  
University of Virginia, Charlottesville, VA  
Georgetown University, Washington, DC  
Royal College of Surgeons, London, UK  
American College of Oral and Maxiofacial Surgeons Symposium, Washington, DC  
Symposium on Novel Molecular Targets for Cancer Therapy, Buenos Aires, Argentina.  
Mosbacher Kolloquium 2000, Mosbach, Germany

University of California, San Diego, Department of Biology, San Diego, CA  
Emory University, Atlanta, GA  
Boston Society of Cancer Research and Harvard Dental School, Boston, NE  
University of Cincinnati, Cincinnati, OH

**Ad-hoc Reviewer:**

Biochemical and Biophysical Acta; Blood; British Journal of Cancer; Cancer Cell; Cancer Research; Clinical Cancer Research; Cell; Cell Growth and Differentiation; Clinical Cancer Research; Current Biology; EMBO Journal; FEBS letters; Journal of Biological Chemistry; Journal of Cell Biology; Journal of Cell Physiology; Journal of Clinical Investigation; Journal of Immunology; Journal of Neurochemistry; Molecular and Cellular Biology; Molecular and Cellular Neurobiology; Molecular Cell; Molecular Pharmacology; Nature; Nature Cell Biology; Nature Medicine; Oncogene; Oral Oncology; Trends in Biological Science; Proceedings of the National Academy of Science, USA; Science

**Research Services:**

**NIH Intramural**

1995	Member, Search Committee for Chief, Gene Targeting Facility, NIDR
1995	Member, Search Committee for Tenure Track Scientist, Smell and Taste Unit, NIDR
1995-1997	Member, Gene Targeting Facility Oversight Committee, NIDR
1995-1996	Member, Sequencing Core Facility Oversight Committee, NIDR
1996	Member, Search Committee for Laboratory Chief, NAB, NIDR
1996	Member, Search Committee for SBRS position, LCMB, NCI
1996	Chair, Search Committee for Tenure Track Scientist, NCI-Navy Clinical Oncology Branch
1996	Ad-hoc member, NIH Central Tenure Committee
1997	Member, Search Committee for Dental Officer, NIDR
1997-present	Member, NIDCR Administrative Oversight Committee
1997-present	Member, NIDCR Tenure and Promotion Committee
1998-2000	Chair, Head and Neck Cancer Consortium, NIH
1998-2001	Member, NIH Central Tenure Committee
1999	Member, Search Committee, Director Division of Basic Sciences, NCI
2000	Member, Search Committee, Structural Biology, NIDDK
2000	Member, Grant Review Panel, Division of Basic Science, NCI
2001	Member, Search Committee, Structural Biology, NIDDK
2001	Member, Search Committee, Tenure Track Investigator, NIAID
2001-present	Member, Steering Committee, NIH-NCI Upper Aerodigestive Track Cancer Intramural Faculty
2002-2003	Chair, Search Committee, Tenure Track Investigator, NIAMS
2002	Member, Search Committee, Structural Biology, NIDDK
2002	Co-Chair, Interinstitute Head and Neck Cancer Consortium, NIH

2002	Member, Search Committee, Laboratory Chief, NCI
2002	Member, Search Committee, Deputy Director, DBS Frederick, NCI
2002-2003	Member, Search Committee, Tenure Track Investigator, NIDCR
2003	Member, Search Committee, Tenure Track Investigator, NHLBI
2003	Member, NIH Ethics Committee, review panel
2003-present	Member, NIDCD, Title 42 Standing Committee
2004	Member, Search Committee, Tenure Track Investigator, NIA
2004	Ad-Hoc Member, NIAID, Tenure Review Panel
2004	Member, Search Committee, Tenure Track Investigator, NIA
2005	Ad-Hoc Member, NCI CCR Tenure Review Panel, NCI
2005	Ad-Hoc member, NIH Central Tenure Committee
2005	Member, Search Committee, Tenure Track Investigator, NIDDK
2005	Member, Search Committee, Laboratory Chief, DBS Frederick, NCI
2005	Member, Search Committee, Program Director, DBS Frederick, NCI
2005	Member, Search Committee, Tenure Track Investigator, NIDCR

## NIH Extramural

1997	Reviewer, Program Project, DER, NCI
1999-2000	Member, Grant Review Panel, Division of Basic Science, NCI
2002	Ad-hoc Member, NIH Study Section, CDF-4
2002	Co-chair, FY2004 NIDCR Initiatives, Head and Neck Cancer, Molecular Anatomy of Head and Neck Cancer: A Genomic/Proteomic Approach
2003-present	Member AIDS Malignancies Consortium, NIH
2003	Member, Biological Pathways and Networks Group, NIH Road Map Initiative
2005	Member, NIGMS, Special Emphasis Review Panel
2005-present	Member, NIH extramural Study Section, NDT
2005	Member, Review Panel NRSA-NIH, Fellowships: Molecular and Cellular Mechanisms

## Extramural

1995-2004	Reviewer, Welcome Trust Foundation
1996-2004	Reviewer, The Israel Science Foundation
1996-present	Preceptor, Howard Hughes Research Scholars
1997-present	Reviewer, Italian Association for Scientific Research
1997-2002	Reviewer, German-Israeli Foundation for Scientific Research & Development
1997-present	Reviewer, National Science Foundation
1997	Reviewer, Swiss National Science Foundation
1997-1999	Reviewer, Medical Research Council of Canada
1998-2001	Member, Cancer Genome Anatomy Program
1998-2004	Member, Reviewing Council, FONCYT, Argentina
1999-2002	Advisor, Howard Hughes Research Scholar Program

2002-2004	Member, External Advisory Board, The Johns Hopkins University, School of Medicine, Spore in Head and Neck Cancer
2002-2004	Member, External Advisory Panel, South Carolina COBRE for Oral Health in Vulnerable Populations, South Carolina
2002-2003	Member, Reviewing Panel, FAMRI. Flight Attendants Medical Research Institute, Young Clinical Scientist Awards Program
2003	Reviewer, Phillip Morris Research Grants
2003-2005	Member Reviewing Panel, The Israel Cancer Research Foundation
2005-present	Adjunct Professor, University of Maryland, Dental School

### **Research Interests:**

Molecular basis of signal transduction through G protein-coupled receptors in cell proliferation, differentiation and neoplastic transformation; molecular basis of squamous carcinogenesis and tumor induced angiogenesis.

### **Selected publications, signal transduction research:**

1. Gutkind J.S., Novotny E., Brann M.R., and Robbins K.C. Muscarinic acetylcholine receptor subtypes as agonist dependent oncogenes. *Proc. Natl. Acad. Sci. USA*, **88**:4703-4707, 1991.
2. Crespo P., Xu N., Simonds W.F., and Gutkind J.S. Ras-dependent activation of MAP kinase pathway mediated by G-protein  $\beta\gamma$  subunits. *Nature*, **369**:418-420, 1994.
3. Coso O., Chiariello M., Yu J.-C., Crespo P., Teramoto, H., Xu N., Miki T., and Gutkind J.S. The small GTP-binding proteins Rac1 and Cdc42 regulate the activity of the JNK (SAPK) signaling pathway. *Cell*, **81**:1137-1148, 1995.
4. Lopez-Illasaca M., Crespo P., Pellici P.G., Gutkind J.S. \*, and Wetzker R. Linkage of G protein-coupled receptors to the MAPK signaling pathway through PI 3-kinase  $\gamma$ . *Science*, **275**:394-397, 1997.
5. Crespo P., Schuebel K.E., Ostrom A.A., Gutkind J.S., and Bustelo X.R. Phosphotyrosine-dependent activation of Rac-1 GDP/GTP exchange by the *vav* proto-oncogene product. *Nature*, **385**:169-172, 1997.
6. Fromm C., Coso O.A., Montaner S., Xu N., and Gutkind J.S. The small GTP-binding protein Rho links G protein-coupled receptors and  $G\alpha_{12}$  to the serum response element and to cellular transformation. *Proc. Natl. Acad. Sci. U.S.A.*, **94**:10098-10103, 1997.
7. Chiariello M., Marinissen M.J., and Gutkind J.S. Regulation of c-myc expression by PDGF through Rho GTPases. *Nature Cell Biol.*, **3**:580-586, 2001.
8. Montaner S., Sodhi A., Molinolo A., Bugge T.H., Sawai E.T., He Y., Li Y., Ray P.E., and Gutkind J.S. Endothelial infection with KSHV genes in vivo reveals that vGPCR initiates Kaposi's sarcomagenesis and can promote the tumorigenic potential of viral latent genes. *Cancer Cell*, **3**:23-36, 2003.
9. Marinissen M.J., Chiariello M., Tanos T., Bernard O., Narumiya S., and Gutkind J.S. The small GTP-binding protein RhoA regulates c-Jun by a ROCK-JNK signaling axis, *Mol. Cell*, **14**:29-41, 2004.

10. Castellone M.D., Teramoto H., Williams B.O., Druey K.M., and Gutkind J.S. Prostaglandin E2 promotes colon cancer cell growth through a novel Gs-axin- $\beta$ -catenin signaling axis. *Science*, **310**:1504-1510, 2005.

**Selected publications, oral cancer research:**

1. Patel V., Senderowicz A.M., Pinto D., Ensley J., Igishi T., Sausville E.A., and Gutkind J.S. Flavopiridol, a novel CDK inhibitor, suppresses the growth of squamous cell carcinomas by inducing apoptosis. *J. Clin. Invest.*, **102**:1674-1681, 1998.
2. Leethanakul C., Patel V., Gillespie J., Shillitoe E., Kellman R.M., Ensley J.E., Limwongse V., Emmert-Buck M.R., Krizman D.V., and Gutkind J.S. Gene expression profiles in squamous cell Carcinomas of the oral cavity: Use of Laser Capture Microdissection for the construction and analysis of stage-specific cDNA libraries. *Oral Oncology*, **36**:474-483, 2000.
3. Leethanakul C., Patel V., Gillespie J., Pallante M., Ensley J.F., Liotta L.A., Emmert-Buck M., and Gutkind J.S. Distinct pattern of expression of differentiation and growth-related genes in squamous cell carcinomas of the head and neck revealed by the use of laser capture microdissection and cDNA arrays. *Oncogene*, **19**:3220-3224, 2000.
4. Patel V., Lahusen T., Leethanakul C., Igishi T., Kremer M., Quintanilla-Martinez L., Ensley J.F., Sausville E.A., Gutkind J.S., and Senderowicz A.M. Antitumor activity of UCN-01 in carcinomas of the head and neck is associated with altered expression of cyclin D3 and p27KIP1. *Clin. Cancer Res.* **8**:3549-3560, 2002.
5. Sriuranpong V., Park J.I., Amornphimoltham P., Patel P., Nelkin B.D., and Gutkind J.S. EGFR-independent constitutive activation of STAT3 in head and neck squamous cell carcinoma is mediated by the autocrine/paracrine stimulation of the IL6/gp130 cytokine system. *Cancer Research*, **63**:2948-2956, 2003.
6. Amornphimoltham P., Sriuranpong V., Patel V., Benavides F., Conti C.J., Sauk J., Sausville E.A., Molinolo A.A., and Gutkind J.S., Persistent activation of the Akt pathway in head and neck squamous cell carcinoma: a potential target for UCN-01, *Clin. Cancer Research*, **10**:4029-37, 2004.
7. Sriuranpong V., Mutirangura A., Gillespie J.W., Patel V., Amornphimoltham P., Molinolo A.A., Kerekhanjanarong V., Supanakorn S., Supiyaphun P., Rangdaeng S., Voravud N., and Gutkind J.S. Global gene expression profile of nasopharyngeal carcinoma by laser capture microdissection and cDNA microarrays. *Clin. Cancer Research*, **10**:4944-58, 2004.
8. Vitale-Cross L., Amornphimoltham P., Fisher G., Molinolo A.A., and Gutkind J.S. Conditional expression of K-ras in an epithelial compartment that includes the stem-cells is sufficient to promote squamous cell carcinogenesis. *Cancer Res.*, **64**:8804-8807, 2004.
9. Baker H., Patel V., Molinolo A.A., Myers J.N., El-Naggar A.K., Gutkind J.S., and Hancock W.S. Proteome-wide analysis of head and neck squamous cell carcinomas using laser-capture microdissection and tandem mass-spectrometry, *Oral Oncol.*, **41**:183-199, 2005.
10. Amornphimoltham P., Patel V., Sodhi A., Nikitakis N.G., Sauk J.J., Sausville E.A., Molinolo A.A., and Gutkind J.S. mTOR, a molecular target in squamous cell carcinomas of the head and neck. *Cancer Research*, **65**:9953-9961, 2005.

**Publication List:**

1. Gutkind J.S. and Enero M.A. Noradrenaline uptake inhibitors counteract the cardiovascular effects of clonidine but not those of guanabenz. *Commun. Biol.*, **1**:319-326, 1983.
2. Gutkind J.S. and Enero M.A. Treatment with clorgyline and pargyline differentially decreases clonidine-induced hypotension and bradycardia. *Naunyn Schmiedeberg's Arch. Pharmacol.*, **327**:189-192, 1984.
3. Gutkind J.S., Bognar I., and Enero M.A. Pharmacological characterization of guanabenz, clonidine-like anti-hypertensive drug. *J. Cardiol. (Argentina)*, **53**:145-147, 1985.
4. Gutkind J.S., Kazanietz M.G., and Enero M.A. Cardiovascular effects of alpha-adrenergic drugs: differences between clonidine and guanabenz. *Naunyn Schmiedeberg's Arch. Pharmacol.*, **332**:370-375, 1986.
5. Gutkind J.S. and Enero M.A. Effects of desipramine on the cardiovascular responses to clonidine and guanabenz. *Hypertension*, **8**:184-186, 1986.
6. Kazanietz M.G., Gutkind J.S., and Enero M.A. Interaction between  $\beta_2$ - and  $\alpha_2$ -adrenoceptor responses in the vascular system: effect of clenbuterol. *Eur. J. Pharmacol.*, **130**:119-124, 1987.
7. Castren E., Kurihara M., Gutkind J.S., and Saavedra J.M. Specific angiotensin II binding sites in the rat stellate and superior cervical ganglion. *Brain Research*, **422**:347-351, 1987.
8. Gutkind J.S. and Enero M.A. Different pharmacological interaction of clonidine and guanabenz with antidepressive drugs. *Clin. Exper. Hypertension*, **A9**:1531-1547, 1987.
9. Gutkind J.S., Kurihara M., Castren E., and Saavedra J.M. Atrial natriuretic peptide receptors in sympathetic ganglia: Biochemical response and alterations in genetically hypertensive rats. *Biochem. Biophys. Res. Commun.*, **149**:65-72, 1987.
10. Kurihara M., Castren E., Gutkind J.S., and Saavedra J.M. Lower number of atrial natriuretic peptide receptors in thymocytes and spleen cells of spontaneously hypertensive rats. *Biochem. Biophys. Res. Commun.*, **149**:1132-1140, 1987.
11. Saito K., Gutkind J.S., and Saavedra J.M. Angiotensin II binding sites in the conduction system of the rat heart. *Am. J. Physiol.*, **253**: (Heart Circ. Physiol. 22), H1618-H1622, 1987.
12. Gutkind J.S., Kurihara M., Castren E., and Saavedra J.M. Increased concentration of angiotensin II binding sites in selected brain areas of spontaneously hypertensive rats. *J. Hypertension*, **6**:79-84, 1988.
13. Kurihara M., Gutkind J.S., Saavedra J.M. Alteration of atrial natriuretic peptide binding sites in spontaneously hypertensive rats. *Am. J. Hypertension*, **1**:12S-14S, 1988.
14. Kurihara M., Castren E., Gutkind J.S., Saito K., and Saavedra J.M. Characterization of  $\beta$ -adrenergic receptors in sections from human blood lymphocyte pellets by quantitative auto-radiography. *Biological Psychiatry*, **23**:746-749, 1988.
15. Nazarali A.J., Gutkind J.S., and Saavedra J.M. Regulation of angiotensin II binding sites in discrete rat brain nuclei after water deprivation. *Cell. Molec. Neurobiol.*, **7**:447-455, 1988.

16. Gutkind J.S., Castren E., and Saavedra J.M. Decreased angiotensin II binding in the anterior pituitary gland of spontaneously hypertensive rats. *Life Science*, **43**:441-451, 1988.
17. Gutkind J.S., Kurihara M., Castren E., and Saavedra J.M. Autoradiographic quantification of vasoactive intestinal peptide binding sites in sections from human blood lymphocytes pellets. *Neuropsychopharmacol.*, **1**:251-255, 1988.
18. Gutkind J.S., Kurihara M., and Saavedra J.M. Increased angiotensin II receptors in brain nuclei of DOCA-salt hypertensive rats. *Am. J. Physiol.*, **255**: (Heart Circ. Physiol. 24), H646-H650, 1988.
19. Castren E., Kurihara M., Gutkind J.S., and Saavedra J.M. Atrial natriuretic peptide receptors in thymus and spleen of young spontaneously hypertensive rats. In *Advances in Atrial Peptide Research. ASH Symposium Series* volume II, 243-247, 1988.
20. Gutkind J.S., Kurihara M., Castren E., and Saavedra J.M. Atrial natriuretic peptide receptors in rat sympathetic ganglia: alterations in genetically hypertensive rats. In *Advances in Atrial Peptide Research, ASH Symposium Series* volume II, 261-265, 1988.
21. Nazarali A.J., Gutkind J.S., Correa F.M.A., and Saavedra J.M. Effect of chronic administration of the converting enzyme inhibitor enalapril (MK 421) on brain atrial natriuretic peptide receptors in Wistar-Kyoto and spontaneously hypertensive rats. *Brain Research*, **475**:134-140, 1988.
22. Gutkind J.S., Kazanietz M.G., Armando I., Puyo A., and Enero M.A. Pressor response induced by clenbuterol treatment in immobilized normotensive rats. *J. Cardiovasc. Pharmacol.*, **13**:793-798, 1989.
23. Kazanietz M.G., Gutkind J.S., Puyo A., Armando I., and Enero, M.A. Further evidence for interaction between vasodilators beta-2-adrenoceptor and vasoconstriction-alpha-2-adrenoceptor mediated responses in maintaining vascular tone in anesthetized rats. *J. Cardiov. Pharmacol.*, **14**:874-880, 1989.
24. Nazarali A.J., Gutkind J.S., Correa F.M.A., and Saavedra J.M. Selective decrease of angiotensin II receptors in the subfornical organ of spontaneously hypertensive rats after chronic treatment with a converting enzyme inhibitor. *Am. J. Physiol.*, **256**:H1609-H1614, 1989.
25. Nazarali A.J., Gutkind J.S., and Saavedra J.M. Calibration of [<sup>125</sup>I]-polymer standards with [<sup>125</sup>I]-brain paste standards for use in quantitative receptor autoradiography. *J. Neurosc. Methods*, **30**:247-253, 1989.
26. Sugita K., Gutkind J.S., Katamine S., and Robbins K.C. The actin domain of Gardner-Rasheed feline sarcoma virus inhibits kinase and transforming activities. *J. Virology*, **63**:1715-1720, 1989.
27. Notario V., Gutkind J.S., Imaizumi M., Katamine S., and Robbins K.C. Expression of the *fgr* proto-oncogene product as a function of myelomonocytic cell maturation. *J. Cell Biol.*, **109**:3129-3136, 1989.
28. Gutkind J.S. and Robbins K.C.: Mobilization of the c-fgr protein-tyrosine kinase as a consequence of neutrophil activation. *Proc. Natl. Acad. of Sci. USA*, **86**:8783-8787, 1989.
29. Gutkind J.S., Lacal P.M., and Robbins K.C. Thrombin-dependent association of phosphatidylinositol-3 kinase with p60<sup>c-src</sup> and p59<sup>fyn</sup> in human platelets, *Mol. Cell. Biol.*, **10**:3806-3809, 1990.

30. Benhamou M., Gutkind J.S., Robbins K.C., and Siraganian R.P. Tyrosine phosphorylation coupled to IgE receptor-mediated signal transduction and histamine release. *Proc. Natl. Acad. Sci. USA*, **87**:5327-5330, 1990.
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